

### **REMARKS**

The Office Action dated 23 March 2005 has been reviewed, and the comments of the U.S. Patent Office have been considered. Claims 19 and 25-27 were previously amended, and claims 1-18 and 20-24 remain as originally filed. Thus, claims 1-27 are submitted for reconsideration.

Claims 1-27 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,489,065 to Nally, Jr. ("Nally"). These rejections are respectfully traversed in view of the following comments.

Applicant's independent claim 1 recites a fuel injector that includes, *inter alia*, "a first facet extending parallel to a first plane," "the first plane being oblique with respect to the base plane," "a first orifice penetrating the first facet" and "the first orifice extending along a first orifice axis, and the first orifice axis being oblique with respect to the first plane" such that "an orientation of the first orifice with respect to the longitudinal axis is defined by a combination of a first relationship of the first plane with respect to the base plane and a second relationship of the first orifice axis with respect to the first plane." Similarly, Applicant's independent claim 8 recites a metering orifice disc that includes, *inter alia*, "an orientation of the first orifice with respect to the longitudinal axis is defined by a combination of a first relationship of the first plane with respect to the base plane and a second relationship of the first orifice axis with respect to the first plane." And Applicant's independent claim 21 recites a method of forming a metering orifice disc for a fuel injector, the method includes, *inter alia*, "forming a first orifice penetrating the member," "the first orifice extending along a first orifice axis oblique with respect to the longitudinal axis," "forming a first facet extending parallel to a first plane" and "the first facet being penetrated by the first orifice, and the first plane being oblique with respect to the base plane." Support for these combinations of features may be found in Applicant's originally filed specification at, for example, paragraph 0035. Specifically, according to a preferred embodiment, the orientation of Applicant's orifice is the additive result of angling the orifice with respect to the facet (e.g., as recited in claim 1, "the first orifice extending along a first orifice axis, and the first orifice axis being oblique with respect to the first plane") and angling the facet with respect to a base plane that is orthogonal to a longitudinal axis (e.g., as recited in claim 1, "the first plane being oblique with respect to the base plane").

By virtue of the combined angles in accordance with Applicant's invention, preferred spray targeting can be achieved along with a number of additional advantages including reduced sac volume, reduced bending angle, reduced split angle, and increased distance between a tangent of an orifice relative to a facet line. These and additional advantages are discussed in Applicant's specification as originally filed at, for example, paragraphs 0039-0042.

In contrast, Nally is completely silent as to orienting an orifice by combining 1) angling of the orifice relative to a facet, and 2) angling of the facet relative to a longitudinal axis. Nally shows through-orifices 48 in a first orifice disk 26a, through-orifices 50 in a second orifice disk 26b and, in the preferred embodiments of Figures 4 and 5, orifices 54 in a third orifice disk member 26c. However, Nally states that the through-orifices 48,50 may have different areas so as to perform different functions. *See* column 4, lines 30-37. For example, the orifices 48 primarily create turbulence, and the orifices 50 primarily meter and target flow. There is, however, no teaching or suggestion that flow targeting is performed in accordance with Applicant's combined angling.

Thus, for at least any of the above reasons, it is respectfully submitted that Nally fails to teach or suggest Applicant's combinations of features as recited in independent claims 1, 8 and 21, and therefore the rejections under 35 U.S.C. § 102(b) of these independent claims should be withdrawn.

Claims 2-7, 9-20 and 22-27 depend, directly or indirectly, from independent claims 1, 8 and 21, respectively, and therefore recite the same patentable combinations of features, as well as reciting additional features that further distinguish over the applied prior art. Thus, it is respectfully submitted that the rejections under 35 U.S.C. § 102(b) of claims 2-7, 9-20 and 22-27 should also be withdrawn, and that these claims also are patentable over the applied prior art.

**CONCLUSION**

Applicant respectfully requests that the Examiner enter this Request for Reconsideration under 37 C.F.R. § 1.116, thereby placing all pending claims in condition for allowance, or at least better form for appeal.

Should the Examiner feel that there are any issues outstanding after consideration of this reply, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution of the application.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 08-1641. **This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).**

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**Heller Ehrman LLP**

1717 Rhode Island Avenue, NW  
Washington, D.C. 20036

Telephone: (202) 912-2000

Facsimile: (202) 912-2020

Respectfully submitted,

Scott J. Anchell

Scott J. Anchell

Agent for Applicant

Reg. No.: 35,035

Customer No. 26633